

Claims

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8. (Amended) A solid-state imaging apparatus being one of pieces diced from an assembly, the solid-state imaging apparatus comprising:

20 a light-receiving chip having a plurality of light-receiving cells arranged either one dimensionally or two dimensionally on one main surface of a base substrate, the main surface being made up of a light-receiving area on which the light-receiving cells are arranged and a periphery area surrounding the light-receiving area;

25 and

a transparent protection plate, at least a part thereof that corresponds to the light-receiving area being transparent, wherein the transparent protection plate has a skirt portion at a

periphery thereof,

the skirt portion is positioned on the periphery area of the main surface thereby forming a space between the light-receiving cells and the transparent protection plate, and

5 the assembly is comprised of two layers, the two layers being a sheet of transparent protection plates and a semiconductor wafer of light-receiving chips that are attached to each other such that each transparent protection plate is combined with a corresponding light-receiving chip, and the diced pieces have such diced edges
10 that result by cutting the two layers simultaneously.

9. (Original) The solid-state imaging apparatus of Claim 8,
wherein

the skirt portion is formed by plating metal on the periphery
15 of the transparent protection plate that is a flat plate made of glass or resin.

10. (Original) The solid-state imaging apparatus of Claim 8,
wherein

20 the transparent protection plate is a flat plate made of resin,
and the skirt portion is formed by pressing the flat resin plate.

11. (Amended) A solid-state imaging apparatus being one
of pieces diced from an assembly, the solid-state imaging apparatus
25 comprising:

a light-receiving chip having a plurality of light-receiving
cells arranged either one dimensionally or two dimensionally on one
main surface of a base substrate, the main surface being made up

of a light-receiving area on which the light-receiving cells are arranged and a periphery area surrounding the light-receiving area; and

a transparent protection plate, at least a part thereof that

5 corresponds to the light-receiving area being transparent, wherein the light-receiving chip has, on the periphery area of the main surface, a rib portion having a loop shape,

the rib portion is attached onto a periphery of the transparent protection plate thereby forming a space between the light-receiving

10 cells and the transparent protection plate, and

the assembly is comprised of two layers, the two layers being a sheet of transparent protection plates and a semiconductor wafer of light-receiving chips that are attached to each other such that each transparent protection plate is combined with a corresponding 15 light-receiving chip, and the diced pieces have such diced edges that result by cutting the two layers simultaneously.

12. (Original) The solid-state imaging apparatus of Claim 11, wherein

20 the rib portion is an insulator made of a material for protective foil.

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15. (Amended) A solid-state imaging apparatus being one of pieces diced from an assembly, the solid-state imaging apparatus

comprising:

a light-receiving chip having a plurality of light-receiving cells arranged either one dimensionally or two dimensionally on one main surface of a base substrate, the main surface being made up of a) a light-receiving area positioned in a central portion of the main surface, the light-receiving cells being arranged on the light-receiving area, and b) a periphery area surrounding the light-receiving area, a plurality of electrodes being provided outside the light-receiving area; and

10 a transparent protection plate, at least a part thereof that corresponds to the light-receiving area being transparent, wherein the transparent protection plate includes: a plurality of terminal pads formed on the other main surface that is different from the main surface,

15 a plurality of holes are provided through the transparent protection plate, each hole electrically connecting one of the electrodes with a corresponding one of the terminal pads, and

the assembly is comprised of two layers, the two layers being a sheet of transparent protection plates and a semiconductor wafer 20 of light-receiving chips that are attached to each other such that each transparent protection plate is combined with a corresponding light-receiving chip, and the diced pieces have such diced edges that result by cutting the two layers simultaneously.

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17. (Amended) The solid-state imaging apparatus of Claim 15, wherein

a plurality of holes are provided through the translucent protection plate, and conductive foil is attached to a side wall of each of the holes.

5 18. (Amended) The solid-state imaging apparatus of Claim 15, wherein

a plurality of holes are provided through the translucent protection plate, and each of the holes is filled with a conductive material.

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19. (Amended) A solid-state imaging apparatus comprising:
a light-receiving chip having a plurality of light-receiving cells arranged either one dimensionally or two dimensionally on one main surface of a base substrate, the main surface being made up
15 of a) a light-receiving area positioned in a central portion of the main surface, the light-receiving cells being arranged on the light-receiving area, and b) a periphery area surrounding the light-receiving area, a plurality of electrodes being provided outside the light-receiving area; and

20 a transparent protection plate, at least a part thereof that corresponds to the light-receiving area being transparent, wherein
the transparent protection plate includes: a plurality of terminal pads formed on the other main surface that is different from the main surface; and a plurality of conductive foils that are
25 insulated from each other, each conductive foil electrically connecting one of the electrodes with a corresponding one of the terminal pads, and being attached to the main surface, a corresponding side surface, and the other main surface of the transparent protection

plate.

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33. (New) The solid-state imaging apparatus of Claim 11,
wherein

the rib portion is produced on the periphery area of the main
surface, by a semiconductor producing process.